



PATENT  
Customer No. 22,852  
Attorney Docket No. 07965.0020-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
<b>Michael G. Harris</b>	)	Group Art Unit: 1772
	)	
Application No.: 10/022,706	)	Examiner: Michael C. Miggins
	)	
Filed: December 17, 2001	)	Confirmation No.: 6249
	)	
For: POLYETHYLENE MELT BLENDS	)	
FOR HIGH DENSITY	)	
POLYETHYLENE	)	

**Attention: Mail Stop Appeal Brief-Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**AMENDED APPEAL BRIEF**

In support of the Notice of Appeal mailed on April 25, 2005 and received by the Office on April 28, 2005, and the Appeal Brief timely filed on July 18, 2005, Applicant files this Amended Appeal Brief in response to the Notification of Non-Compliant Appeal Brief mailed on October 4, 2005, concurrently with a Response to the Notification of Non-Compliant Appeal Brief.

This Amended Appeal Brief filed in response to the Notification of Non-Compliant Appeal Brief dated October 4, 2005 is timely filed, the period of reply having been extended five months to April 4, 2005, by a request for extension of time and fee payment filed concurrently herewith.

**I. Real Party In Interest**

The real party in interest is Media Plus, Inc., having a principal place of business at 401 Olive Street, Findlay, OH 45840.

**II. Related Appeals And Interferences**

There are no related appeals or interferences.

**III. Status Of Claims**

Pending claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 stand rejected and are appealed. Claims 5, 16-19, 24, 27 and 29-40 are cancelled.

**IV. Status Of Amendments**

No amendment was filed subsequent to final rejection.

**V. Summary Of Claimed Subject Matter**

The independent claims define novel melt-blended polyethylene resin compositions with unique properties that are recited specifically in the claims. The independent claims also define plastic articles than can be made from the novel compositions, and methods for making the novel compositions.

The polyethylene resin compositions are formed by melt-blending three polyethylene resins with specified physical properties in amounts relative to one another such that the melt-blended compositions have a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours. A concise explanation of the subject matter of each independent claim follows, with citations to the specification.

**A. Independent Claim 1**

Independent claim 1 defines a melt-blended polyethylene composition comprising three polyethylene resins. The three resins are blended in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6; pg. 5, ll. 13-17).

The first polyethylene resin is a high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28). The second polyethylene resin is a high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28). Finally, the third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10).

**B. Independent Claim 20**

Independent claim 20 also defines a melt-blended polyethylene composition comprising three polyethylene resins that are blended in amounts relative to one another such that the patentable composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6; pg. 5, ll. 13-17). However, claim 20 recites more specific limitations of the three polyethylene resins.

The first polyethylene resin of claim 20 is a high molecular weight high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28). The second polyethylene

resin is a homopolymer high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28). The third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10).

**C. Independent Claim 23**

Independent claim 23 defines the invention as a plastic article comprising the novel composition of claim 1. Independent claim 23 thus defines a plastic article comprising a novel melt-blended polyethylene composition comprising three polyethylene resins that are blended in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6 and ll. 21-23; pg. 4, ll. 16-22; pg. 5, ll. 13-17; pg. 10, ll. 26-31; pg. 13, ll. 13-15).

The first polyethylene resin is a high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28). The second polyethylene resin is a high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28). The third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10).

**D. Independent Claim 26**

Independent claim 26 is similar to independent claim 20, but defines the invention as a plastic article. The plastic article comprises a novel melt-blended polyethylene composition

comprising three polyethylene resins that are blended in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6 and ll. 21-23; pg. 4, ll. 16-22; pg. 5, ll. 13-17; pg. 10, ll. 26-31; pg. 13, ll. 13-15).

The first polyethylene resin is a high molecular weight high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28). The second polyethylene resin is a homopolymer high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28). The third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10).

**E. Independent Claim 41**

Independent claim 41 is similar to independent claim 1, but defines the invention as a method for producing the polyethylene composition. The claimed method comprises melt-blending together three polyethylene resins in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6; pg. 5, ll. 11-17; pg. 12, ll. 6-21).

The first polyethylene resin is a high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28; pg. 12, ll. 15-16). The second polyethylene resin is a high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970

g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28; pg. 12, ll. 16-17). The third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10; pg. 12, ll. 8-9).

**F. Independent Claim 44**

Independent claim 44 is similar to independent claim 20, but defines the invention as a method for producing the polyethylene composition. The method of claim 44 comprises melt-blending together three polyethylene resins in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours (*see, e.g.*, pg. 2, ll. 24-27; pg. 3, ll. 3-6; pg. 5, ll. 11-17; pg. 12, ll. 6-21).

The first polyethylene resin is a high molecular weight high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-16; pg. 8, ll. 23-28; pg. 12, ll. 15-16). The second polyethylene resin is a homopolymer high density resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup> (*see, e.g.*, pg. 3, ll. 12-18; pg. 8, ll. 23-28; pg. 12, ll. 16-17). Finally, the third polyethylene resin is selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof (*see, e.g.*, pg. 3, ll. 2-3; pg. 8, ll. 9-10; pg. 12, ll. 8-9).

**VI. Grouping of Claims**

Three distinct groups of claims that do not stand or fall together are covered by the Examiner's rejections: 1) Claims 1-4, 7-15 and 20-22, which define melt-blended compositions;

- 2) Claims 23, 25-26 and 28, which define plastic articles made from melt-blended compositions;  
and 3) Claims 41-50, which define methods for producing melt-blended compositions.

**VII. Grounds Of Rejection To Be Reviewed On Appeal**

**A. Rejections under 35 U.S.C. § 102**

**Claims 1-4, 7-15, 20-23, 25-26, 28 and 41-50 were rejected under 35 U.S.C. § 102(b) as being anticipated by Herman et al. (U.S. 5,534,317).**

**B. Rejections under 35 U.S.C. § 103**

- 1. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were rejected under 35 U.S.C. § 103(a) as being obvious over Starita (U.S. 6,674,914) in view of Herman et al. (U.S. 5,534,317).**
- 2. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were rejected under 35 U.S.C. § 103(a) as being obvious over Herman et al. (U.S. 5,534,317) in view of Starita (U.S. 6,674,914).**

**C. Rejections under the judicially created doctrine of obviousness-type double patenting.**

- 1. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of Starita (U.S. 6,674,914) in view of Herman et al. (U.S. 5,534,317).**
- 2. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were *provisionally* rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of co-pending Application Serial No. 10/337,084 (U.S. Patent Application Publication No. US 2003/0171492) in view of Herman et al. (U.S. 5,534,317).**
- 3. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were *provisionally* rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of co-pending Application Serial No. 10/862,273 (U.S. Patent Application Publication No. US 2005/0004316) in view of Herman et al. (U.S. 5,534,317).**

**D. Objection**

**Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were objected to.**

### VIII. Argument

#### A. **Rejections under 35 U.S.C. § 102**

**Claims 1-4, 7-15, 20-23, 25-26, 28 and 41-50 are not anticipated by Herman et al. (U.S. 5,534,317).**

##### **1. Claims 1-4, 7-15 and 20-22**

Claims 1-4, 7-15 and 20-22 were improperly rejected under 35 U.S.C. § 102(b) as being anticipated by Herman et al. (U.S. 5,534,317) ("Herman"). Herman is alleged to inherently disclose the blend properties recited in the claims, namely a density of about 0.945 to about 0.960 and a melt flow index of about 0.1 to about 0.4.

Undeterred by MPEP Section 707.02, the examiner has now imposed five inherency rejections in as many Office Actions. Each of the four previous inherency rejections, based in turn on prior art patents to Berthold, Tajima, Schellenberg, and Wooster, was withdrawn in favor of its successor on this list, which now includes Herman. Accordingly, the Applicants must again protest that the cited reference does not inherently disclose the claimed invention because anticipation by inherency requires the unstated element necessarily to be present in the subject matter of the reference.

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (*quoting Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991)) (emphasis added); *see Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1667 (Fed. Cir. 2003). "The fact that a certain



result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." MPEP § 2112, IV, p. 2100-54 (Rev. 2, May 2004) (*citing In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)) (emphasis in original).

The present invention enables three particular polyethylene resins to provide a novel composition with specific properties. The claims call for the three resins to be present in amounts relative to one another such that the composition has the specifically recited properties. Only the Applicants have accomplished this. Only a blatant disregard for "amounts relative to one another" could attribute that accomplishment to the Herman patent, which merely happens to include the same resins. The presence of all three resins in the disclosure of a single prior art reference does not mean that those three resins *necessarily must* be included together "in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, [and] a melt flow index of about 0.1 to about 0.4."

Independent claims 1 and 20 each recite a density of about 0.945 to about 0.960 and a melt flow index of about 0.1 to about 0.4. Because Herman does not inherently disclose a density of about 0.945 to about 0.960 or a melt flow index of about 0.1 to about 0.4, claims 1 and 20 cannot be anticipated by Herman under 35 U.S.C. § 102(b). For this reason, the Applicants respectfully request that the rejection of claims 1 and 20 under 35 U.S.C. § 102(b) be reversed.

Claims 2-4, 7-15 and 21-22 depend from independent claims 1 and 20, and each recites limitations that further distinguish the invention from the disclosure of Herman under 35 U.S.C. § 102(b). The Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) be reversed as well.

**2. Claims 23, 25-26 and 28**

Claims 23, 25-26 and 28 were improperly rejected under 35 U.S.C. § 102(b) as being anticipated inherently by Herman. As discussed above, Herman does not inherently disclose melt-blended compositions as presently claimed. Therefore, the plastic articles disclosed by Herman can not inherently comprise such a composition. *See In re Robertson*, 169 F.3d at 745, 49 USPQ2d at 1950-51.

Specifically, Herman does not necessarily disclose melt-blended compositions that have a density of about 0.945 to about 0.960 or a melt flow index of about 0.1 to about 0.4. Independent claims 23 and 26 each define a plastic article comprising a melt blended polyethylene composition having a density of about 0.945 to about 0.960 and a melt flow index of about 0.1 to about 0.4. Because Herman does not inherently disclose a density or a melt flow index within the claimed ranges, claims 23 and 26 cannot be anticipated by Herman under 35 U.S.C. § 102(b). For this reason, the Applicants respectfully request that the rejection of claims 23 and 26 under 35 U.S.C. § 102(b) be reversed.

Claims 25 and 28 depend from independent claims 23 and 26 and recite elements that further distinguish the invention from the disclosure of Herman under 35 U.S.C. § 102(b). The Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) be reversed as well.

**3. Claims 41-50**

Claims 41-50 were improperly rejected under 35 U.S.C. § 102(b) as being anticipated by Herman. Again, Herman does not inherently disclose melt-blended compositions as presently claimed. Therefore, Herman can not inherently disclose a method for producing such a composition. *See In re Robertson*, 169 F.3d at 745, 49 USPQ2d at 1950-51.

Specifically, Herman does not inherently disclose methods for producing melt-blended compositions that have a density of about 0.945 to about 0.960 or a melt flow index of about 0.1 to about 0.4. Independent claims 41 and 44 each recite that the claimed blend has a density of about 0.945 to about 0.960 and a melt flow index of about 0.1 to about 0.4. Because Herman does not inherently disclose a density or a melt flow index within those ranges, claims 41 and 44 cannot be anticipated by Herman under 35 U.S.C. § 102(b). For this reason, the Applicants respectfully request that the rejection of claims 41 and 44 under 35 U.S.C. § 102(b) be reversed.

Claims 42-43 and 45-50 depend from independent claims 41 and 44 and recite elements that further distinguish the invention from the disclosure of Herman under 35 U.S.C. § 102(b). The Applicants respectfully request that the rejection of these dependent claims under 35 U.S.C. § 102(b) be reversed as well.

**B. Rejections under 35 U.S.C. § 103**

- 1. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 (all pending claims) were not made obvious by Starita (U.S. 6,674,914) in view of Herman et al. (U.S. 5,534,317).**

- a. Claims 1-4, 6-15 and 20-22**

The rejection of this group of claims is incorrect for at least two reasons. First, the prior art provides no motivation to combine the references in the manner proposed by the examiner. Second, the Starita reference teaches away from the use of LLDPE. Each of these reasons requires reversal of the rejection.

- (i) No motivation to combine Starita with Herman.**

Federal Circuit case law "makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

The object of Starita's invention is to provide HDPE blend components with enhanced stress crack resistance. *See* Starita, Column 2, lines 28-33. In the Office Action mailed February 22, 2005, at p. 7, the examiner states that "the motivation to employ the Herman blends in the pipes of Starita is found in Herman's abstract, where improved stress crack resistance is taught." That statement is incorrect, misleading, and a poor substitute for the "rigorous" analysis demanded by the law.

The true teaching of Herman's abstract begins with Herman's own choice of words: "The physical properties of the container including stress crack resistance are maintained as contrasted to the loss of such physical properties that have been heretofore resulted from the use of post consumer resins." The examiner's choice of words, "improve the stress crack properties" and "improved stress crack resistance," appears only in the Office Action. Equating "maintained" with "improved" is not harmless error. Instead, it ignores the incompatibility of Herman with Starita under 35 U.S.C. § 103.

Starita's invention takes commercially available HDPE copolymers that fail environmental stress crack resistance requirements, such as Chevron Phillips 5202 HDPE, and enhances their stress crack resistance. Herman's invention, on the other hand, simply adds post consumer resins and LLDPE to commercially available resins in quantities such that the physical properties of the commercially available resin are maintained rather than reduced.

Herman has found that by adding LLDPE to a blend of post consumer HDPE and virgin HDPE, the post consumer HDPE does not reduce the stress crack resistance of the blend. This provides a way to recycle a limited amount of post consumer HDPE such that the stress crack resistance of the virgin component is maintained in spite of the presence of the post consumer HDPE. A person of ordinary skill in the art would not carelessly impose an increase in any

measured parameter if not prompted to do so, and would *avoid* an increase if the stated objective is to *maintain* the original value. Therefore, if a person of ordinary skill in the art intends to enhance a physical property of a virgin HDPE, such as stress crack resistance, then Starita's patent might be considered, but Herman's would certainly not. The rejection under 35 U.S.C. § 103 thus fails to show motivation as an "essential evidentiary component" of obviousness. *See Dembiczak* at 175 F.3d at 999, 50 USPQ2d at 1617.

Unfortunately, the Office Action of 02/22/05 compels still further rebuttal on the issue of motivation/hindsight. This is because the examiner makes a transparent attempt to evade reversal by building a written record that inappropriately favors the rejection. That preemptive strategy begins at page 7 of the Office Action, where the examiner finds it necessary to supplement the teachings of the Herman abstract by stating that "it is deemed desirable to make pipes with good stress crack resistance." Perhaps realizing that good stress crack resistance is faint motivation to combine incompatible teachings, the examiner inflates this embellishment of Herman from "good" at page 7 to "improved" at page 9. This is not evidence of obviousness under 35 U.S.C. § 103. It is only evidence of "the subtle but powerful attraction of a hindsight-based obviousness analysis." *See Dembiczak* at 175 F.3d at 999, 50 USPQ2d at 1617.

Further errors abound in the examiner's treatment of the Starita reference. For example, the examiner dismisses Starita's selective use of polyethylenes with differing unimodal, bimodal and multimodal molecular weight distributions as simply a matter of engineering choice depending on the desired properties of the finished article. This misrepresents the teachings of the reference under 35 U.S.C. § 103. Starita achieves his desired properties by increasing the number of tie molecules to decrease the number of polymer chain loose ends caused by shorter polyethylene molecules. Starita accomplishes this goal by melt blending HDPE components

with sufficiently high molecular weight with low molecular weight HDPE components *having narrow molecular weight distributions* to provide the desired physical properties by reducing the number of shorter polyethylene molecules.

Starita also discusses the use of bimodal HDPE with *two narrow molecular weight distribution peaks* that are spread far apart, which eliminates short molecular species. Starita's choice of which HDPEs to blend depends, in addition to physical characteristics, on the level of short molecular species in each HDPE. The molecular weight distribution provides an indication of the level of short molecular species. Accordingly, there is more to Starita's selection than simply interchanging various HDPEs with different physical characteristics. Because Starita's choice of HDPEs relates both to the unimodal/bimodal/multimodal characteristics and the physical properties of each HDPE, their use is not a simple engineering choice, but is critical to Starita's invention.

**(ii) Starita teaches away from the use of LLDPE.**

Obviousness is rebutted by showing that the reference teaches away from the claimed invention. *In re Reisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). "A prior art reference may be considered to teach away when 'a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.'" *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 885, 45 USPQ2d 1977, 1984 (Fed. Cir. 1998) (quoting *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994)). A reference may teach away if it seeks to avoid the applicant's claimed invention due to its perceived undesirability. *In re Fine*, 837 F.2d at 1074.

Starita's Background teaches away from the use of LLDPEs by discussing how prior blends that use LLDPE do not have an appropriate density. For example, Starita says of Michie, Jr., U.S. Pat. No. 4,374,227, which discloses a blend of HDPE, LLDPE and carbon black, that "[u]nfortunately, this approach has the disadvantage of too low a density to meet the cell classification of 335400C according to ASTM D-3350 for corrugated and profile HDPE pipe." *See* Starita, Column 2, lines 1-11. After reading Starita and considering Starita's disclosure as a whole, a person of ordinary skill in the art would be discouraged from using LLDPE in a blend composition to enhance the stress crack resistance and processing characteristics.

**(iii) The rejection of claims 1-4, 6-15 and 20-22 over Starita in view of Herman should be reversed.**

Because there is no motivation in either Starita or Herman to combine those two references as proposed by the examiner, claims 1-4, 6-15 and 20-22 could not have been made obvious under 35 U.S.C. § 103 by Starita in view of Herman. Moreover, Starita teaches away from the use of LLDPEs. For these reasons, Applicants respectfully request reversal of the rejection of claims 1-4, 6-15 and 20-22 under 35 U.S.C. § 103 over Starita and Herman.

**b. Claims 23, 25-26 and 28**

Claims 23, 25-26 and 28 were improperly rejected under 35 U.S.C. § 103 as being made obvious by Starita in view of Herman. As discussed above for claims 1-4, 6-15 and 20-22, there is no motivation in either Starita or Herman to combine these references, and Starita teaches away from the use of LLDPEs. For these reasons, the Applicants respectfully request that the rejection of claims 23, 25-26 and 28 under 35 U.S.C. § 103 be reversed.

**c. Claims 41-50**

Claims 41-50 were improperly rejected under 35 U.S.C. § 103 as being made obvious by Starita in view of Herman. As discussed above for claims 1-4, 6-15 and 20-22, there is no

motivation in either Starita or Herman to combine these references. Starita teaches away from the use of LLDPEs. For these reasons, the Applicants respectfully request that the rejection of claims 41-50 under 35 U.S.C. § 103 be reversed.

**2. Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were not made obvious by Herman et al. (U.S. 5,534,317) in view of Starita (U.S. 6,674,914).**

**a. Claims 1-4, 6-15 and 20-22**

The examiner's rejection of claims 1-4, 6-15 and 20-22 is incorrect for the same reasons discussed above for claims 1-4, 6-15 and 20-22 with respect to the combination of Starita in view of Herman. Quite simply there is no motivation to combine the references and Starita teaches away from the use of LLDPE. For these reasons, the Applicants respectfully request that the rejection of claims 1-4, 6-15 and 20-22 under 35 U.S.C. § 103 be reversed.

**b. Claims 23, 25-26 and 28**

The examiner's rejection of claims 23, 25-26 and 28 is incorrect for the same reasons discussed above for claims 1-4, 6-15 and 20-22 with respect to the combination of Starita in view of Herman. As discussed above for claims 1-4, 6-15 and 20-22 with respect to the combination of Starita in view of Herman there is no motivation to combine the references and Starita teaches away from the use of LLDPE. For these reasons, the Applicants respectfully request that the rejection of claims 23, 25-26 and 28 under 35 U.S.C. § 103 be reversed.

**c. Claims 41-50**

The examiner's rejection of claims 41-50 is incorrect for the same reasons discussed above for claims 1-4, 6-15 and 20-22 with respect to the combination of Starita in view of Herman. As discussed above for claims 1-4, 6-15 and 20-22 with respect to the combination of Starita in view of Herman there is no motivation to combine the references and Starita teaches



away from the use of LLDPE. For these reasons, the Applicants respectfully request that the rejection of claims 41-50 under 35 U.S.C. § 103 be reversed.

**C. All rejections under the judicially created doctrine of obviousness-type double patenting should be reversed.**

Every one of these rejections is incomplete and fundamentally flawed as a matter of law.

"Double patenting is altogether a matter of what is claimed." *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1277, 23 USPQ2d 1839, 1843 (Fed. Cir. 1992). It is "beyond question that the determining factor in deciding whether or not there is double patenting is the existence vel non of patentable difference between two sets of claims." *General Foods Corp.*, 972 F.2d at 1278-79, 23 USPQ2d at 1844. "We are not here concerned with what one skilled in the art would be aware of from reading the claims, but with what inventions the claims define." *In re Sarett*, 327 F.2d 1005, 1013, 140 USPQ 474, 481 (CCPA 1964). "We must therefore look at each claim and analyse it on its own merits." *In re Sarett*, 327 F.2d at 1013, 140 USPQ at 481. The MPEP reflects that admonition at Section 804(B)(1), page 800-22:

"Any obviousness-type double patenting rejection should make clear:

(A) The differences between the inventions defined by the conflicting claims -- a claim in the patent compared to a claim in the application; and

(B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim in issue is an obvious variation of the invention defined in a claim in the patent."

The examiner's analysis of claims in the Starita patent consists entirely of this vacuous pronouncement: "The '914 patent claims HDPE blends, but fails to claim LLDPE's in its blends." *See* Office Action of 02/22/05 at page 9.

No helpful information follows from the examiner's next statement, which concludes the double patenting analysis by informing the Applicants once again that "It would have been obvious to one having ordinary skill in the art at the time of the invention to employ the blends of Herman in the compositions/pipes of the '914 patent to improve the stress crack resistance thereof."

At best, those statements might be characterized as a misguided attempt to reject the Applicants' claims by reading the reference claims for what they disclose, as if they were prior art, rather than for what they define as the patentable scope of an invention. *See General Foods*, 972 F.2d at 1281, 50 USPQ2d at 1845-1846. Such a rejection has absolutely no merit under the law and must be reversed.

Regarding the claims of the '084 application, the examiner's analysis at page 10 of the Office Action is devoted to brief statements of what they "cover" or "do not cover." Equally imprecise assessments of claim coverage are provided for the '273 application at page 11 of the Office Action. The possibility of dominating claim coverage is not relevant to obviousness-type double patenting. *See Sarett* at 140 USPQ 179-180. An Office Action that dwells on that issue does nothing to meet the examiner's burden of showing that the invention claimed by the Applicants is not patentably distinct from the invention claimed by the references.

None of the Applicants' pending claims would cause an improper timewise extension of patent rights for inventions defined by the claims of the Starita patent, the '084 application, or the '273 application, or for any obvious variations of those inventions. The examiner has made no evidentiary demonstration to the contrary. Nevertheless, in an effort to ensure that this Appeal Brief complies fully with 37 CFR § 41.37(c)(vii), but with the foregoing discussion in mind,

Applicants submit the following treatment of each individual ground of rejection for double patenting.

**1. The rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting over Starita in view of Herman should be reversed.**

Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were rejected under the judicially created doctrine of obviousness-type double patenting over the claims of Starita (U.S. 6,674,914) in view of Herman et al. (U.S. 5,534,317). The analysis in an obviousness-type double patenting rejection parallels that for an obviousness-type determination under 35 U.S.C. 103. *See In re Bratt*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

Because there is no motivation in either Starita or Herman to combine those references, as fully discussed above, claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 could not have been made obvious by the claims of Starita in view of Hermann, and the Applicants respectfully request that the rejection be reversed. Further, and alternatively, because Starita teaches away from the use LLDPEs, also as discussed above, claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 could not have been made obvious by the claims of Starita in view of Herman, and the Applicants respectfully request that the rejection be reversed.

**2. The provisional rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting over the claims of Application Serial No. 10/337,084 in view of Herman should be reversed or withdrawn.**

Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-22 of co-pending Application Serial No. 10/337,084 (U.S. Patent Application Publication No. US 2003/0171492) in view of Herman et al. (U.S. 5,534,317). The examiner's rejection of these claims is incorrect

because there is no motivation to combine the references. Even if the rejection were not incorrect for that reason, this is a provisional rejection and the appealed claims are currently ready to issue. It follows that the rejection should be withdrawn and the application should be allowed to issue as a patent.

**a. There is no motivation to combine the claims of co-pending Application Serial No. 10/337,084 with Herman.**

Application Serial No. 10/337,084 ("the '084 application"), which is a continuation-in-part of the Starita '914 patent, teaches the enhancement of physical properties whereas Herman only teaches the maintenance of physical properties. One of skill in the art wishing to enhance the physical properties of a HDPE blend composition would not combine the teaching of the '084 Application with the teaching of Herman because Herman does not teach the enhancement of physical properties.

**b. Because this application is ready to issue as a patent, the provisional rejection should be withdrawn and this application should be allowed to issue.**

In the case of a provisional double patenting rejection, MPEP § 804 states that "[i]f the 'provisional' double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the 'provisional' double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent." MPEP § 804 I. B., p. 800-19. Because this application is ready for issuance, this provisional rejection should be withdrawn and a non-provisional rejection should be issued in the '084 application.

**c. The present application is the senior application.**

The '084 application was filed on January 6, 2003 as a continuation-in-part of application No. 10/194,136, filed July 12, 2002, and application No. 10/017,314, filed December 14, 2001 and now U.S. Patent No. 6,749,914 ("the '914 patent"). Any new disclosure introduced into the '084 application is junior to the present application, which was filed on December 17, 2001. Therefore, if a claim in the '084 continuation-in-part application recites a feature that was not originally disclosed in the parent application, but was first introduced in the continuation-in-part application, that claim is entitled to the filing date of only the continuation-in-part application. *See* MPEP § 201.11 VI; *In re Chu*, 66 F.3d 292, 32 USPQ2d 1077 (Fed. Cir. 1995).

Each independent claim of the '084 application recites one or more features that were not disclosed by the '914 patent, which is the only application that would provide a date early enough to be senior to the present application. For example, claim 1 of the '084 Application recites "a number average molecular weight ( $M_n$ ) greater than about 20,000". This number average molecular weight element is not disclosed in any way by U.S. Patent No. 6,749,914. Many other elements of claim 1 and the other independent claims also are not supported by U.S. Patent No. 6,749,914. Because there is no proper disclosure under 35 U.S.C. § 112 in the only parent application with a filing date senior to the present application, the present application is the senior application and should be allowed to issue.

**d. The provisional rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting should be reversed or withdrawn.**

Because there is no motivation in either the '084 application or Herman to combine those references, claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 cannot be obvious under 35 U.S.C. § 103 over the '084 application in view of Herman. Applicants respectfully request that the

rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting over Application Serial No. 10/337,084 in view of Herman be reversed. Additionally, due to the timing of the application, the provisional rejection should be withdrawn and the present application, which is the senior application, should be allowed to issue.

**3. The provisional rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting over Application Serial No. 10/862,273 in view of Herman should be reversed or withdrawn.**

Claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 were provisionally rejected under the judicially created doctrine of obviousness type double patenting over claims 1-12 of co-pending Application Serial No. 10/862,273 (U.S. Patent Application Publication No. 2005/0004316) in view of Herman et al. (U.S. 5,534,317). The examiner's rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 is incorrect and, aside from the impropriety of the rejection, should be reversed because the present claims are ready to issue. The rejection is incorrect because there is no motivation to combine the references. Even if the rejection were correct, this is a provisional rejection and the appealed claims are currently ready to issue. The rejection should be withdrawn and the application should be allowed to issue as a patent.

**a. There is no motivation to combine the claims of co-pending Application Serial No. 10/862,273 with Herman.**

There is no motivation to combine the Application Serial No. 10/862,273 ("the '273 application") with Herman. Specifically, and as discussed in more detail above with respect to the Starita '914 patent, the '273 application, which is a continuation of the Starita '914 patent, teaches the enhancement of physical properties whereas Herman only teaches the maintenance of physical properties. One of skill in the art wishing to enhance the physical properties of a HDPE

blend composition would not combine the '273 application with Herman because Herman does not teach the enhancement of physical properties.

- b. Because this application is ready to issue as a patent, the provisional rejection should be withdrawn and this application should be allowed to issue.**

This is a provisional rejection and the present application, which is the senior application, is ready to issue. The rejection should be withdrawn and this application should be allowed to issue.

- c. The provisional rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting should be reversed or withdrawn.**

Because there is no motivation in either the '273 application or Herman to combine those references, claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 cannot be obvious under 35 U.S.C. § 103 over the '273 application in view of Herman. For these reasons, Applicants respectfully request that the rejection of claims 1-4, 6-15, 20-23, 25-26, 28 and 41-50 under the judicially created doctrine of obviousness-type double patenting over Application Serial No. 10/862,273 in view of Herman be reversed. Alternatively, the provisional rejection should be withdrawn and the present application, which is the senior application, should be allowed to issue.

**D. Objection**

The examiner objects to claims 1-4, 6-15, 20-23, 25-26, 28, and 41-50, boldly proclaiming that "the 'compositions' do not exhibit stress crack resistance. Articles made therefrom do." The statutory basis for the objection, such as a paragraph of 35 U.S.C. § 112, is not identified.

The Applicants' specification identifies ASTM D5397 as a test method for measuring stress crack resistance. *See* Application, page 4, lines 23-24. That method calls for the use of a

dumbbell shaped notched test specimen. Regardless of the size or shape of an article that will be formed from the composition, that standard specimen is required for the test. Because the specimen used for the test is the same across the universe of all possible articles to be formed from the composition, the results indicate a parameter of the composition rather than an article that is formed of the composition.

In each of claims 1-4, 6-15, 20-23, 25-26, 28, and 45-50, the recited value of stress crack resistance refers to a property of the claimed composition rather than to a property of an article made from the claimed composition. The Applicants respectfully request that the objection be withdrawn.

**IX. Claims Appendix**

A claims appendix containing a copy of the appealed claims is attached.

**X. Evidence Appendix**

No evidence submitted during prosecution is relied upon by this Appeal Brief, so no evidence is attached.

**XI. Related Proceedings Appendix**

None (no related proceedings).




Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
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Dated: March 14, 2006

By:   
Debarshi Rahul Das  
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## CLAIMS APPENDIX

**Claim 1 (previously presented):** A melt-blended polyethylene composition comprising:

a first high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup>;

a second high density polyethylene resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup>; and

a third polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof,

said resins being present in the melt-blended polyethylene composition in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 2 (previously presented):** The composition of claim 1, wherein the first, second and third resins are each independently selected from the group consisting of virgin, recycled, scrap and wide specification resins, and mixtures thereof.

**Claim 3 (previously presented):** The composition of claim 1, wherein the third polyethylene resin has a melt flow index of about 0.1 to about 1.5.

**Claim 4 (previously presented):** The composition of claim 1, wherein the third polyethylene resin has a density of about 0.920 to about 0.940.

**Claim 5 (cancelled)**

**Claim 6 (previously presented):** The composition of claim 1, wherein the first and second high density polyethylene resins are each independently selected from the group consisting of a unimodal resin, a bimodal resin, a multimodal resin, and mixtures thereof.

**Claim 7 (previously presented):** The composition of claim 1, wherein the first and second high density polyethylene resins are present in a total amount of about 50 to about 95 percent by weight.

**Claim 8 (original):** The composition of claim 1, wherein the flow rate ratio of the melt-blended composition is about 80 to about 130.

**Claim 9 (previously presented):** The composition of claim 1, wherein the flow rate ratio of the first and second resins is about 20 to about 200.

**Claim 10 (previously presented):** The composition of claim 9, wherein the flow rate ratio of the first and second resins is about 90 to about 130.

**Claim 11 (original):** The composition of claim 1, wherein the flow rate ratio of the linear low density polyethylene and the linear medium density polyethylene is about 20 to about 60.

**Claim 12 (original):** The composition of claim 1, wherein the melt flow index of the melt-blended composition is about 0.15 to about 0.35.

**Claim 13 (original):** The composition of claim 12, wherein the melt flow index of the melt-blended composition is about 0.2 to about 0.3.

**Claim 14 (original):** The composition of claim 1, wherein the density of the melt-blended composition is 0.945 to 0.955 and the melt flow index is about 0.1 to 0.4.

**Claim 15 (previously presented):** The composition of claim 1, wherein the first and second high density polyethylene resins are each independently selected from the group consisting of a high molecular weight high density polyethylene resin, a homopolymer high density polyethylene resin, and mixtures thereof.

**16-19 (cancelled)**

**Claim 20 (previously presented):** A melt-blended polyethylene composition comprising:

a high molecular weight high density polyethylene resin having a density of about 0.941 to about 0.958 g/cm<sup>3</sup> and a melt flow index of about 0.01 to about 0.2;

a homopolymer high density polyethylene resin having a density of about 0.957 to about 0.970 g/cm<sup>3</sup> and a melt flow index of about 0.1 to about 1.5; and

at least one additional polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof,

said resins being present in the melt-blended polyethylene composition in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 21 (previously presented):** The composition of claim 20, wherein the high molecular weight high density polyethylene resins and homopolymer high density polyethylene resins are present in a total amount of about 50 to about 95 percent by weight.

**Claim 22 (previously presented):** The composition of claim 20, wherein each of the resins are independently selected from the group consisting of virgin, recycled, scrap and wide specification resins, and mixtures thereof.

**Claim 23 (previously presented):** A plastic article comprising a melt blended polyethylene composition that comprises:

a first high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup>;

a second high density polyethylene resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup>; and

a third polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof,

said resins being present in the melt-blended polyethylene composition in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 24 (cancelled)**

**Claim 25 (previously presented):** The article of claim 23, wherein the first, second and third resins are each independently selected from the group consisting of virgin, scrap, recycled, and wide specification resins, and mixtures thereof.

**Claim 26 (previously presented):** A plastic article comprising a melt blended polyethylene composition that comprises:

a high molecular weight high density polyethylene resin having a density of about 0.941 to about 0.958 g/cm<sup>3</sup> and a melt flow index of about 0.01 to about 0.2;

a homopolymer high density polyethylene resin having a density of about 0.957 to about 0.970 g/cm<sup>3</sup> and a melt flow index of about 0.1 to about 1.5; and

at least one additional polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof, said polyethylene resins being present in the melt-blended polyethylene composition in amounts relative to one another such that the composition has a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 27 (cancelled)**

**Claim 28 (previously presented):** The article of claim 26, wherein the first, second and third resins are each independently selected from the group consisting of virgin, scrap, recycled, and wide specification resins, and mixtures thereof.

**Claim 29-40 (cancelled)**

**Claim 41 (previously presented):** A method for producing a polyethylene composition, comprising melt blending together a sufficient amount of a first high density polyethylene resin having a melt flow index of about 0.01 to about 0.2 and a density of about 0.941 to about 0.958 g/cm<sup>3</sup>; a second high density polyethylene resin having a melt flow index of about 0.1 to about 1.5 and a density of about 0.957 to about 0.970 g/cm<sup>3</sup>; and a sufficient amount of a third polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof, to produce a melt-blended composition having a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 42 (previously presented):** The method of claim 41, wherein the first, second and third resins are each independently selected from the group consisting of virgin, recycled, scrap and wide specification resins, and mixtures thereof.

**Claim 43 (previously presented):** The composition of claim 41, wherein the first and second high density polyethylene resins are present in a total amount of about 50 to about 95 percent by weight.

**Claim 44 (previously presented):** A method for producing a polyethylene composition, comprising melt blending together a sufficient amount of a high molecular weight high density polyethylene resin having a density of about 0.941 to about 0.958 g/cm<sup>3</sup> and a melt flow index of about 0.01 to about 0.2; a homopolymer high density polyethylene resin having a density of about 0.957 to about 0.970 g/cm<sup>3</sup> and a melt flow index of about 0.1 to about 1.5; and a sufficient amount of at least one additional polyethylene resin selected from the group consisting of linear low density polyethylene resins, linear medium density polyethylene resins, and mixtures thereof, to produce a melt-blended composition having a density of about 0.945 to about 0.960 g/cm<sup>3</sup>, a melt flow index of about 0.1 to about 0.4, and a stress crack resistance of at least 24 hours.

**Claim 45 (previously presented):** The method of claim 44, wherein each of the resins is independently selected from the group consisting of virgin, recycled, scrap and wide specification resins, and mixtures thereof.

**Claim 46 (previously presented):** The method of claim 44, wherein the high molecular weight high density polyethylene resin and homopolymer high density polyethylene resin are present in a total amount of about 50 to about 95 percent by weight.

**Claim 47 (previously presented):** The composition of claim 23, wherein the first and second high density polyethylene resins are present in an total amount of about 50 to about 95 percent by weight.

**Claim 48 (previously presented):** The composition of claim 23, wherein the first and second high density polyethylene resins are each independently selected from the group consisting of a high molecular weight high density polyethylene resin, a homopolymer high density polyethylene resin, and mixtures thereof.

**Claim 49 (previously presented):** The article of claim 26, wherein the high molecular weight high density polyethylene resin and homopolymer high density polyethylene resin are present in a total amount of about 50 to about 95 percent by weight.

**Claim 50 (previously presented):** The composition of claim 41, wherein the first and second high density polyethylene resins are each independently selected from the group consisting of a high molecular weight high density polyethylene resin, a homopolymer high density polyethylene resin, and mixtures thereof.